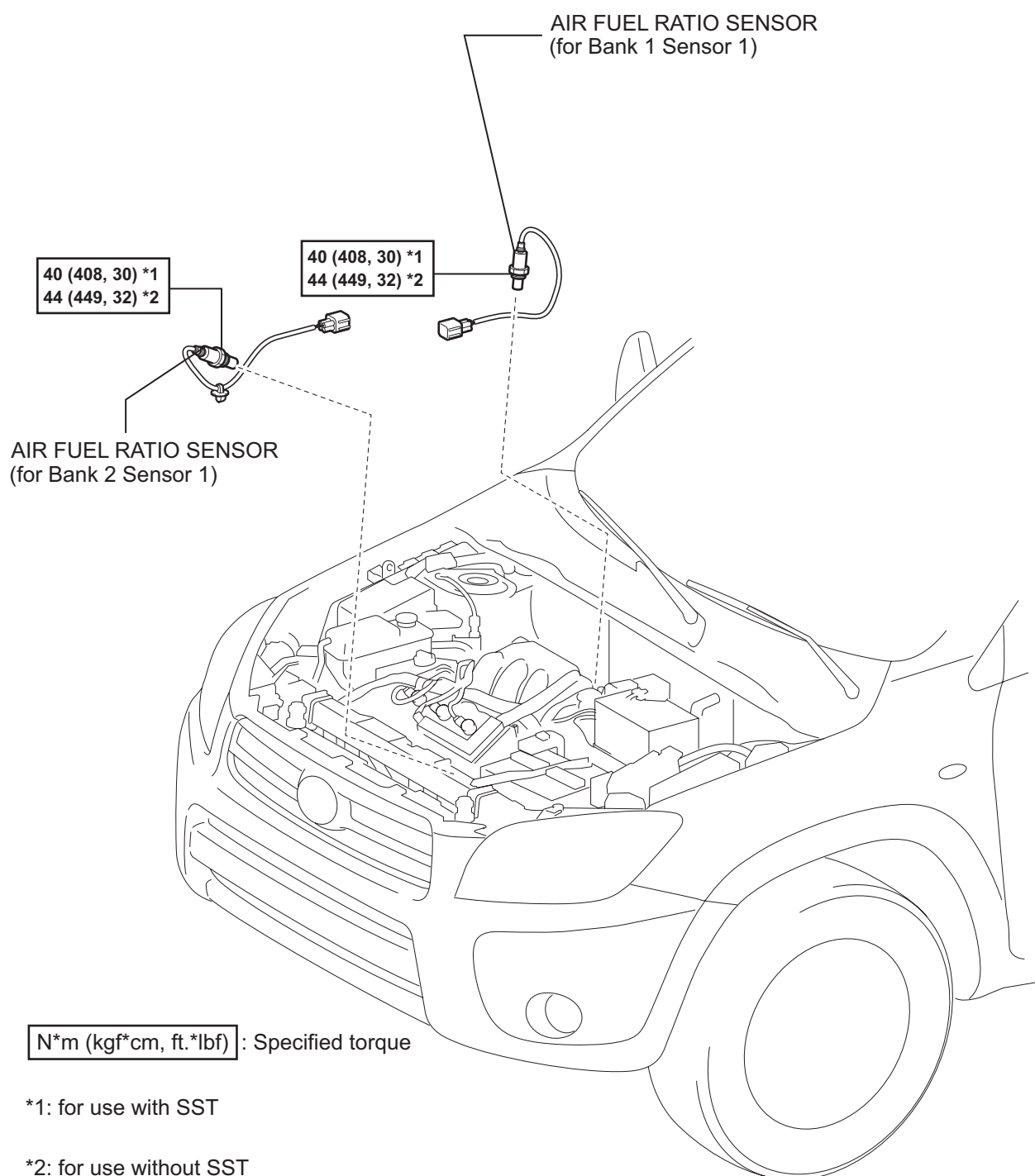


AIR FUEL RATIO SENSOR

COMPONENTS

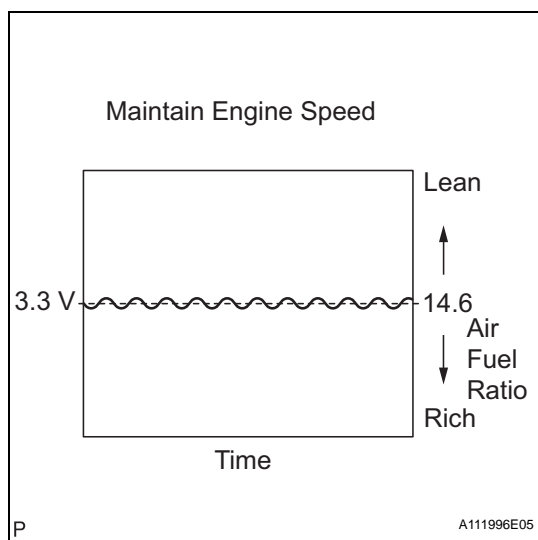
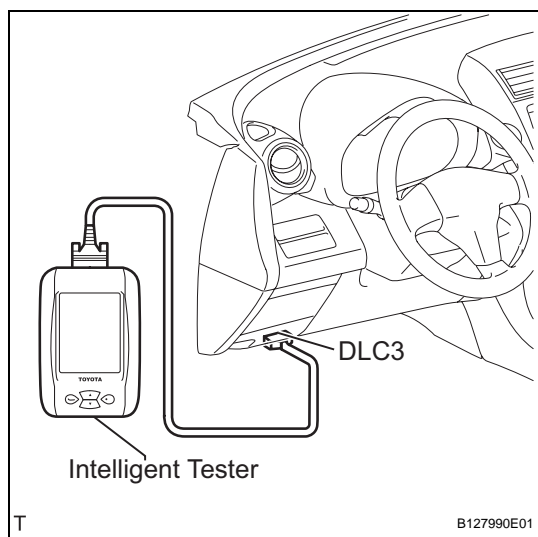


EC

ON-VEHICLE INSPECTION

1. CHECK AIR FUEL RATIO COMPENSATION SYSTEM

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch ON.
- Select the following menu items: Data List / A/F S B1 S1, A/F S B2 S1, O2S B1 S2 and O2S B2 S2.
- Warm up the A/F sensor with the engine speed at 2,500 rpm for approximately 2 minutes.



- Maintain the engine speed at 2,500 rpm and confirm that the display of "A/F S B1 S1" and "A/F S B2 S1" is as shown in the illustration.

HINT:

- The illustration may slightly differ from the display on the intelligent tester.
- Only the intelligent tester displays the waveform of the A/F sensor.

- Confirm that the display of "O2S B1 S2" and "O2S B2 S2" changes between 0 to 1 V with the engine speed at 2,500 rpm.

OK:

The voltage output oscillates more than 8 times in 10 seconds.

NOTICE:

- Perform the check immediately after warming the engine up.
- If the voltage variation could not be verified, warm up the A/F sensor again. If it could not be verified even after warming up the sensor again, check for DTCs (see page [ES-334](#)).

REMOVAL

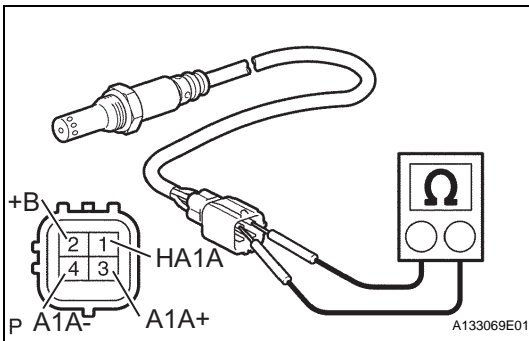
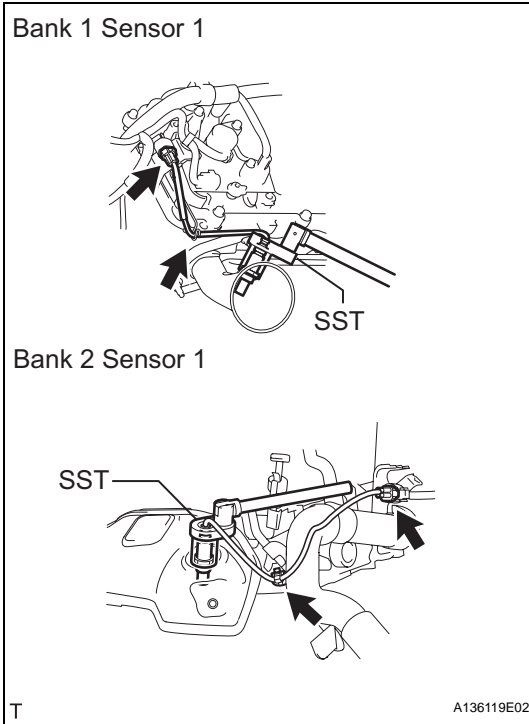
1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. **REMOVE AIR FUEL RATIO SENSOR (for Sensor 1)**
 - (a) Disconnect the sensor connector.
 - (b) Using SST, remove the sensor from the exhaust manifold.

SST 09224-00010



INSPECTION

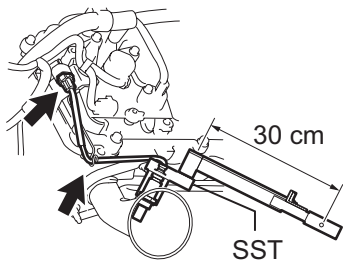
1. **INSPECT AIR FUEL RATIO SENSOR (for Sensor 1)**
 - (a) Measure the resistance of the sensor.

Standard resistance

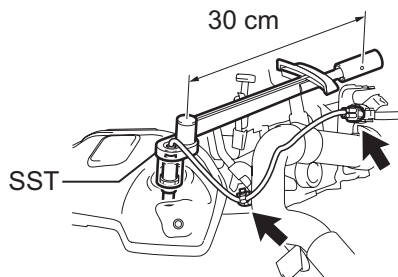
Tester Connection	Condition	Specified Condition
1 (HA1A) - 2 (+B)	20°C (68°F)	1.8 to 3.4 Ω
1 (HA1A) - 4 (A1A-)	-	10 k Ω or higher

If the resistance is not as specified, replace the sensor.

Bank 1 Sensor 1



Bank 2 Sensor 1



T

A136120E01

INSTALLATION

1. INSTALL AIR FUEL RATIO SENSOR (for Sensor 1)

- (a) Using SST, install the sensor to the exhaust manifold.

SST 09224-00010

Torque: 40 N*m (408 kgf*cm, 30 ft.*lbf) for use with SST

44 N*m (449 kgf*cm, 32 ft.*lbf) for use without SST

HINT:

- Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).
- Make sure SST and a wrench are connected in a straight line.

- (b) Connect the sensor connector.

2. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

3. CHECK FOR EXHAUST GAS LEAKS